PROF. J. F. W. VON BEZOLD.

It is with deep regret that we record the death on Sunday last, February 17, of Prof. Wilhelm von Bezold, director of the Prussian Meteorological Institute.

Von Bezold was born at Munich in June, 1837, and was admitted to the degree of Ph.D. at Göttingen in 1860. Thence he returned to Munich as privat-docent in 1861, became extraordinary professor in the University in 1866, and ordinary professor at the Polytechnic in 1868. In 1878 he undertook the organisation of the Bavarian meteorological service as director of the central meteorological station, and remained in charge of the service until 1885, when he was called to Berlin as professor of meteorology in the University, and director of the Meteorological Institute, which was reorganised by him.

The Institute included not only the central establishment in Berlin, which formed the headquarters of the branch in charge of Prof. Hellmann for dealing with the climatology and rainfall of the Prussian kingdom, but also the meteorological and magnetic observatories at Potsdam, in connection with which the names of Sprung, Eschenhagen, and A. Schmidt are so well known, and the aëronautical section at Tegel, which was brought into existence and developed as a branch of the Institute under Prof. Assmann. A year and a half ago the work of the latter institution was transferred to the new and independent establishment at Lindenberg.

In the course of his long and distinguished scientific career von Bezold's activity ranged over a wide field. His writings include papers on colour vision and the retina, and the dust figures of electrical discharge; but he is best known for his contributions to meteorology as the physics of the atmosphere, the aspect of the subject which he found most attractive, and to the theory of terrestrial magnetism. A volume of his collected papers on these subjects was issued as recently as October, 1906, by Vieweg and Son. It includes the papers on the thermodynamics of the atmosphere, contributed to the Berlin Academy, which are the classical memoirs upon that section of meteorology. The last paper in the collection contains his proposal for testing Gauss's theory of terrestrial magnetism by measurements along a complete parallel of latitude. This was before the Association of Academies in London in 1904, when von Bezold was one of the representatives of the Berlin Academy.

All who had the advantage of being associated with him in international work will miss his kindly presence and scientific enthusiasm, as well as his sympathetic and cautious counsel.

PROF. N. A. MENSCHUTKIN.

PROF. NICOLAI ALEXANDROVICH MENSCHUTKIN, who died on February 5, was born in St. Petersburg on October 24, 1842. After finishing his studies at the St. Petersburg University, he went abroad and worked in the laboratories of Schtreker in Tübingen, Würtz in Paris, and Kolbe in Marburg. On his return to St. Petersburg in 1865, he read his dissertation for the degree of Master of Chemistry on "The Hydrogen of Phosphorous Acid and its Incapacity to be replaced by Metals." In 1867 he began to lecture on chemistry at the St. Petersburg University. He also gave special lectures on organic chemistry, and was head of the analytical laboratory. In 1885 he left the analytical department and devoted himself entirely to teaching organic chemistry. His doctor's dissertation was on "The Synthesis and Properties of Hydrocarbons." In the seventies of last century he was secretary, and in the eighties rector, of the Physico-mathematical Faculty. In recent years he left the University and lectured at the Polytechnic Institute of St. Petersburg.

Menschutkin devoted his spare time to the Physico-chemical Society, the Journal of which he edited. He was vice-president of the Students' Aid Society, and, being a fine musician, he organised the students' choir and orchestra.

His first researches were on the inorganic acids, but he subsequently devoted himself almost exclusively to organic chemistry. In the 'seventies he did some good work in the province of physical chemistry and in the mechanics of chemistry. His researches on the influence of isomerism of alcohols and acids on the formation of composite ethers were published in the Records of the St. Petersburg Imperial Academy in 1877, and he was awarded the Sokoloff medal for this work. This was his first fundamental work, and it marked an epoch in the history of Russian chemistry. Prof. Menschutkin supplemented these researches by further work on the same subject in 1881. His researches on etherification from 1877 to 1882 brought many important additions to that branch of organic chemistry. In 1898, 1900, and 1902 he was occupied in investigating the influence of carbon chains on the velocity of reaction and decomposition of carbon compounds. His last important research was on the velocity of chemical change in the polymethylene series, which was translated into English and published in the Journal of the Chemical Society. A paper on the "Influence of Catalysts on the Formation of Anilides" almost closes his scientific career.

His "Lectures on Organic Chemistry" passed through many editions. His "Analytical Chemistry" became the text-book for all the Russian universities and technical schools. In his preface to the sixth edition, which has been translated into English and German, Prof. Menschutkin claims that analytical chemistry should form the basis for the study of organic and physical chemistry. Prof. Menschutkin, unlike his contemporary Prof. Mendeléeff, was a wonderful manipulator in the laboratory, and this was partly the secret of the precision of his results. Prof. Mendeléeff had the wider vision of the science, Prof. Menschutkin excelled in details. His earliest work was much influenced by his first teacher, Prof. Sokoloff.

NOTES.

It was announced in Sunday's *Observer* that the Government would shortly introduce a Bill dealing with the constitution of the proposed Imperial College of Applied Science at South Kensington, and the relation of the college to the University of London. We find, however, that this report is incorrect; though the scheme for the establishment of the college was outlined nearly four years ago, when Messrs. Wernher, Beit and Co. offered 100,000*l.* towards the cost and the London County Council agreed to contribute 20,000*l.* a year for maintenance, the matter is still in abeyance. This delay, as we have remarked before, is both unfortunate and dangerous. The chief point at issue is whether the college shall form part of the University of London and be controlled by the Senate of the University, or whether it shall be an independent institution having a governing body of its own. While the relationship between the two institutions is being decided, there is no visible sign that the scheme is taking definite shape, and many men of science and leaders of industry are becoming impatient at the delay. The departmental committee on the Royal College of Science and Royal School of Mines, in referring to the composition and functions of the governing body of the new college, remarked (see Nature, February 8, 1906, p. 345):—"Of the relation of the new institution to the University of London, it is necessary to premise that we are agreed that it is desirable that the new institution should be established immediately, and that its organisation should proceed without delay." With this recommendation we are in complete agreement. When the college has been in existence for several years it will be time enough to decide what its connection with the University must be. In the meantime, the special governing body proposed by the departmental committee ought to be appointed to start the institution. If something is not done soon, the enthusiasm with which the scheme for the establishment of the new college for advanced instruction and research in applied science was received will give place to public condemnation of the dilatory methods adopted in a matter of great national importance.

Prof. A. Lippmann and Prof. Simon Newcomb have been elected honorary fellows of the Physical Society.

Dr. C. D. Walcott, director of the U.S. Geological Survey, has been elected secretary of the Smithsonian Institution in succession to the late Prof. S. P. Langley.

Prof. J. Milne, F.R.S., will deliver the opening lecture of the session at the West India Committee Rooms this evening, February 21, the subject being "The Construction of Buildings in Earthquake Countries."

A storm area of more than usual magnitude was influencing the weather over the whole of the British Islands, and, indeed, over the greater part of western Europe, during Tuesday night and Wednesday. The central area of the disturbance was situated near Skudesnaes at 8 a.m. on February 20, the barometer registering 27·65 inches, which is probably a record low reading in that position. The barometer was below 29 inches over nearly the whole of the United Kingdom, and the fall was unusually rapid. Strong westerly gales occurred throughout Tuesday night, and they were continuing yesterday in all parts of our islands, as well as in France.

The executive of the British Fire Prevention Committee has appointed a special commission on concrete aggregations. The scope of the commission is described in the following resolution:—"That having regard to the confusion existing as to concrete aggregates, and the absence of their exact specification, the British Fire Prevention Committee do hereby constitute from among its members and subscribers a special commission to report upon and define the aggregates suitable for concrete floors intended to be fire resisting having due regard to questions of strength, expansion, and the chemical constituents and changes of the aggregates." In forming the commission the various technical interests have as far as possible been represented. Sir William Preece, K.C.B., F.R.S., will act as chairman, and Mr. Matt Garbutt as honorary secretary. Correspondence should be addressed to the assistant secretary, 1 Waterloo Place, S.W.

The February number of the *Century Magazine* contains a short article on Amundsen's expedition and the North-West Passage, by General A. W. Greely. A short outline (illustrated by a map) of the history of the search for the North-West Passage is given, and General Greely writes appreciatively of Amundsen's skill and daring in the handling of the *Gjoa*, as well as of the value of the magnetic work he carried out.

The *Times* of February 5 publishes a telegram from Calcutta stating that a message had been received there on the previous day from Dr. Sven Hedin. Dr. Hedin reached Ngangon Tso on January 21, and hopes to arrive at Shigatse at the end of this month. The explorer says that the journey approaching completion is the most wonderful he has made in Asia in twenty-two years. Eight hundred and forty miles of unknown country, on a line running diagonally across Tibet, have been explored, and mapped in 184 sheets. Many new lakes, rivers, mountain ranges, and goldfields have been discovered, and the geographical results are said to be extraordinarily rich.

Lieut. Boyd Alexander, who, along with his brother Captain Claud Alexander, Captain G. B. Gosling, Mr. P. A. Talbot (surveyor), and a Portuguese collector, left this country in the spring of 1904 on an exploring expedition across Africa, has returned to London. Captain Claud Alexander died at Maifoni in November, 1904, and Captain Gosling in the Ubangi-Welle region in June, 1906. Much valuable work has been accomplished. A careful triangulation has been carried out from Ibi, in Nigeria, to Lake Chad, and the lake itself traversed in various directions. Part of the course of the Shari was explored; from thence the Ubangi was reached, and the expedition made its way northward to the little-known region where many of the Bahr-el-Ghazal tributaries rise, and down the Yei to the Nile. The expedition has been particularly successful in collecting specimens in natural history, including skulls, bones, and skins of the okapi.

Detailed investigations of the Calabrian earthquake of September 8, 1905, are now appearing. We have received a memoir by Prof. Rizzo on the rate of propagation of this earthquake, and a note, published in the *Atti* of the Turin Academy of Sciences, in which he discusses the depth at which this earthquake originated, and adopts 50 kilometres as the most probable value. Another paper, by Dr. Mario Baratta, in the Journal of the Tuscan Academy of Natural Sciences, deals with the distribution of the damage, and shows that there were seven distinct centres of destructive violence, and that the earthquake was a true polycentral one. Indirectly, this paper shows that Prof. Rizzo's estimate of the depth of origin, founded on the assumption that the focus was simple and comparatively restricted in extent, must be in excess of the truth, so that 50 kilometres should be regarded as the maximum possible, not the actual, depth of origin.

Prof. P. Carmody, who was an eye-witness of the earthquake at Kingston on January 18, has sent to the *Times* some details of the disturbance, from which we have obtained the following particulars of scientific interest:—The building material that has best withstood the shock is wood, and next to this cement. Brick has suffered most, and stone is almost as bad. An examination of the several streets in different parts of the town shows that generally the east and west walls of the buildings have collapsed, while those facing north and south have been but little injured. This indicates that the earth movement ran east and west. Another striking general feature is that the east and west walls have fallen away from the rest of the building, meeting together in narrow streets, of which there are many running north and south, and therefore making it impossible for anyone to escape uninjured from these narrow streets. The streets running east and west have not been completely blocked by fallen débris, partly because they are wider, but principally because the walls running in this direction have suffered less. A peculiar alteration in the position of statues in the square is deserving of record, as it may subsequently throw some light on the direction of the earth movement. On the south side of the square is a statue of the Queen. The figure is turned slightly to the left on the pedestal. In a corresponding position on the north side of the square another statue is turned slightly to the right. The statue of Père Dupont, facing north-east, was thrown off the pedestal and lay broken on the ground; another statue, facing west, is snapped across the middle, and the bust has dropped on the lower part of the pedestal, but not overturned. These four statues are within a hundred yards or so of each other. In Kingston the earthquake was revealed to most persons by a strong swaying, side to side motion, which soon changed to a sharp up and down shake, and then terminated. The grating of the bricks and stones as they slid over each other was the first sound that distinguished it from the ordinary West Indian earthquake. Gusts of wind blew after sunset, and between 7 p.m. and 8 p.m. another shock was felt. During the night this was followed by six or seven others, and these were repeated during the subsequent day and night, but without causing further appreciable damage.

THE London County Council has decided to issue, under the superintendence of Dr. A. C. Haddon, a series of handbooks to the ethnological collection of the Horniman Museum, Forest Hill. The first of these, compiled by Dr. H. S. Harrison, has just made its appearance under the title of "From Stone to Steel," being a handbook of the cases illustrating the Stone, Bronze, and Iron ages. It is well illustrated, and describes clearly and concisely the various types of weapons and implements met with in the superficial deposits of Europe. The chief types of the human race met with in Europe are also noticed, while a general survey of the history of stone and metal implements in non-European countries is added.

HORSE-BREEDING in Wisconsin forms the subject of Bulletin No. 141 of the University of Wisconsin Agricultural Station, issued in November last, the report being drawn up by Mr. A. S. Alexander. New laws for the licensing of stallions for public service in Wisconsin came into force in January of last year, and the present report deals with the working of these laws, and at the same time suggests such further enactments as appear necessary to improve the breed of horses in the State. Special attention has been directed to the elimination of unsound horses, and with the present powers it has been found possible to enforce the retirement of a considerable number of stallions coming under this category. The ultimate aim of the authorities is, however, to get rid of all but pure-bred stallions for stud purposes; but, as elsewhere, farmers and breeders do not respond as heartily as might be desired to efforts which are essentially for their own benefit.

"THE Laws in Force against Injurious Insects and Foul Brood in the United States" is the title of the sixty-first bulletin issued by the Entomological Bureau of the U.S. Department of Agriculture, the text being drawn up by Dr. L. O. Howard, the entomologist and chief of the section, and Mr. A. F. Burgess, secretary of the American Association of Horticultural Inspectors. Bulletins covering much the same ground were issued respectively in 1895 and 1898, and the publication of the present issue has been rendered necessary by the enactment of new laws and the active interest in the subject recently manifested by several States in the Union. From the preface, it appears to have been found impossible to bring the work absolutely up to date, although practically all the more important laws are included. The issue also includes an account of the annual meetings of the American Association of Horticultural Inspectors from 1897 to 1905.

IN the course of an article on the biology of the sandy tracts of Illinois, by Messrs. C. A. Hart and H. A. Gleason, forming the seventh part of vol. vii. of the Bulletin of the Illinois State Laboratory of Natural History, the first-named author observes that sand-dwelling insects display a remarkable similarity in colour to their surroundings, this being essential owing to their exposed condition. The similarity is chiefly restricted to the dorsal surface, and is noticeable in insects of all orders. In the case of the Carolina grasshopper, individuals taken from the sandy tract appeared to be paler than those from the surrounding darker ground. The moulting of these insects takes place in daylight, when the colourless fresh exterior is exposed to the action of rays reflected from surrounding surfaces, and it has been suggested by Vosseler that these rays may by some kind of photographic action produce an approximation to the general colour of the environment. How the effect is produced remains to be explained, but the explanation seems a probable one.

ACCORDING to *Beilage zur allgemeinen Zeitung* for January 30, an expedition is in course of being organised, under the auspices of the Royal Academy of Sciences of Berlin and the Government of the Dutch East Indies, for the purpose of exploring Java in search of further remains of Pithecanthropus. The originator of the idea appears to be Frau Prof. Selenka, widow of the late Prof. Selenka, of Munich, who has already travelled extensively in Borneo for the purpose of collecting embryos of the orang-utan. Dr. Elbert is attached to the expedition as geologist, whilst Dr. Maskowski, of Berlin, goes out as zoologist. A Dutch engineer, Mr. Oppenoorth, will have charge of the surveying and excavating operations. The Pleistocene volcanic breccia from which the original remains of Pithecanthropus were obtained by Prof. Dubois at Trinil is believed to have a wide extent in the mountains of Java, reaching in some places to a height of 100 metres or more above sea-level, and it is proposed to examine this stratum thoroughly in a number of the more promising localities. We may cordially endorse the hope expressed by our German contemporary that the expedition will succeed in its object, and bring to Europe a collection which will throw some definite light on the ancestry of the human race.

THE *Times* of February 4 contained an article on the grouse-disease inquiry, summarising the results of the work of the departmental committee up to the present time. The committee, it will be remembered, was appointed by the Board of Agriculture, with the proviso that it was to find its own funds. It is for the most part composed of owners of grouse-moors, with Lord Lovat as chairman. From the point of view of progress in the inquiry, it is unfortunate that the work of investigation has coincided with a period of complete health among British grouse. The article criticises, not altogether favourably, a pamphlet issued by the committee under the title of "Notes on the Grouse," purporting to give a *résumé* of all that is known about the disease. Among its omissions is the absence of any reference to the theory that the midge may be the carrier of the infection. Whether

Klein's bacillus is really the cause of the disease must for the present be left open. Much time has been spent in searching for this organism, but hitherto without success. If the bacillus "should, after all, prove to have nothing to do with the disease, all this time will have been lost. It is not suggested that this will prove to be the case; but merely that it would have been better to start with an open mind on that point as well as upon others." It is pointed out that as no progress can be made while the disease is in abeyance, and that the original subscriptions to the committee were to last for three years only, further financial means will be required with the recrudescence of the malady in the future if any definite results are to be obtained.

The Proceedings of the Cotteswold Naturalists' Field Club and the Transactions of the Hull Geological Society are excellent examples of the way in which the work of local societies may be produced. The former is printed by the historic house of John Bellows, in Gloucester. In the part for September, 1906, Mr. S. S. Buckman has a handsomely illustrated paper on Schlotheimia and species of other genera of Liassic ammonites. The reports of various excursions are accompanied by useful landscape-views. The Hull Geological Society, in its issue styled "vol. vi., part i., for the years 1901–5," published in 1906, gives us Mr. Danford's detailed investigation of the belemnites of the Speeton Clay, with four remarkably fine plates of photographs, taken, like Mr. Buckman's, from the actual specimens. One is tempted to ask, however, whether the money spent so liberally on such papers would not have been better devoted to their production in the *Geological Magazine*. The excellent records of local surface-changes in Yorkshire, by Messrs. Butterfield and McTurk, and Mr. Richardson's note on Ceratodus from Westbury-on-Severn, stand, of course, in another category. The judgment of scientific readers must often be suspended between regret at the scattering of valuable work and admiration at the zeal with which it is put forward in its place of origin. It must be admitted that local publications of so high a standard are in themselves a stimulus to research.

The Journal of the Royal Sanitary Institute for February (xxviii., No.) contains an important paper by Prof. S. Delépine on testing the germicidal power of various substances by the thread method, in which it is concluded that nearly all the problems of disinfection can be studied by means of it. Dr. Newsholme contributes a paper on the voluntary notification of phthisis in Brighton, and Dr. Heron one on coordination of measures against tuberculosis.

The report from the Select Committee on the Housing of the Working Classes Acts Amendment Bill, which was recently issued, contains some important recommendations, particularly as regards sanitary administration. It is found that at present sanitary control is imperfect, and that the administration of the Acts by the rural district councils is neglected. Among the recommendations are transference of the administration of the public health and housing laws to the county councils; the provision of medical officers of health, properly qualified and adequately remunerated, so that they can devote their whole time and energies to the duties of their office; the provision of an expert staff of inspectors under the medical officer, whose title shall be altered from that of "Inspector of Nuisances" to "Sanitary Inspector"; and the registration of every house and tenement in rural districts. It is considered that small local authorities cannot satisfactorily frame and administer building and public-health bye-laws, and it is suggested that the Local Government Board should establish a staff of officers for the special purpose of supervising the construction, sanitary condition, and repair of houses under the Public Health Acts, and the provision of houses under the Housing Acts.

No. 25 of the "Scientific Memoirs of the Government of India," by Captain S. R. Christophers, is devoted to a consideration of the importance of larval characters in the classification of mosquitoes. It is suggested therefrom that Stegomyia should be removed from the Culicina and placed in a group, Stegomyina, of its own, that Megarhinus and Toxorhynchites, together with Mucidus and Psorophora (removed from the Culicina), should form a separate group, &c. Memoir No. 26, also by Captain Christophers, deals with the *Leucocytozoon canis*, a protozoan parasite of the white blood corpuscles of the dog, first described by Bentley and later by James. According to Christophers, *L. canis* comes within the division Hæmogregarina of Laveran, and very possibly represents the mammalian form of Karyolysus (Labbe). Reproduction occurs by the formation of true cysts, containing about thirty sporozoits. Encystment takes place in cells of the bone marrow. After escaping from the cysts, the sporozoits invade mononuclear transitional cells in the marrow, where they are seen as naked, oval forms. These undergo changes and become encapsuled, whilst the host cell is altered in a characteristic way. The complete sexual development of this parasite takes place in the dog-tick (*R. sangineus*).

The *Kew Bulletin* was initiated in 1887, and although for a period the annual volumes were in abeyance, the series is now complete for a period of twenty years. The director of the gardens has recently issued an index as appendix v. to last year's volume, detailing the contents from the commencement of the journal to the end of last year.

The numbers of the *Agricultural News* (December 29, 1906, and January 12, 1907) lately received contain references to the agricultural conference at Jamaica that was so disastrously cut short. With regard to rubber in British Guiana, an expression of opinion by Dr. Bovallius is quoted wherein species of Sapium are recommended for cultivation on the lowlands in preference to Hevea and Castilloa, that require to be planted at a higher elevation.

Several references have appeared recently in the morning journals to an alleged cure for the opium habit emanating from the Straits Settlements. Mr. E. M. Holmes, writing to the *Times*, January 22, states that the plant has been identified as *Combretum Sundaicum*, a woody climber growing abundantly on the plains around Kuala Lumpur, in Selangor. Further information is supplied in the *Pharmaceutical Journal*, January 26, where Mr. Holmes says that it would be premature to express a definite opinion until a larger quantity of the material is available for chemical analysis and physiological investigation.

It is probably unknown to many pteridologists that crested and other "sporting" ferns may not infrequently be collected in the British Isles. Mr. C. T. Druery, who has found several wild "sports," writing in the Journal of the Royal Horticultural Society (December, 1906), quotes as two instances the discovery of a markedly crested form of *Athyrium filix-foemina* at Kilrush, Ireland, and the growth of a crested variety of bracken at Faygate, Sussex. Other papers in the same journal include an article on horticulture in relation to medicine, and notes on tufted pansies, hollies, and the ideal potato. In the first named Mr. E. M. Holmes furnishes a list of plants now cultivated as herbs, among which one unexpectedly finds the nettle and mallow; an account of medicinal plants suitable for cultivation in this country is also given.

ACCORDING to the report of the Department of Agriculture in the Madras Presidency for 1905–6, a large experimental area has been acquired at the village of Taliparamba, in the Malabar district, for growing pepper vines with the object of studying their morphology, varieties, and other problems connected with their cultivation. Under the control of Mr. C. A. Barber, the results are likely to add materially to our knowledge of this historically and economically interesting product, and will, it is hoped, resuscitate the industry in South India. Other important products receiving attention are sugar-canes, ground-nuts, cotton, and tobacco, but experiments are not sufficiently advanced to furnish conclusions. The manufacture of door-mats, napkins, and muslins from the fibre of *Agave vivipara* is an extension of the usual applications of this fibre.

THE Cycads are so few in number, and they occupy such an important position in plant taxonomy, that a paper embodying new researches cannot fail to be interesting. As the outcome of an expedition to Chavarillo, in the Mexican tropics, Prof. C. J. Chamberlain was able to secure material of the little-known ovule of the genus Dioon, and his results are published in the *Botanical Gazette* (November, 1906). The author obtained a series of stages from the appearance of the archegonium initial cell to the germination of the seed. The archegonia are formed in October to the number of four or five in each ovule; a neck cell is cut off, and subsequently a ventral canal nucleus separates mitotically from the egg nucleus. Haustoria are developed in connection with the transference of nourishment to the egg cell. The nucleus of the ovum is the largest known in plants, and contains twelve chromosomes. Incidentally, the author concurs with the opinion that plants of Dioon may continue to live for a thousand years.

A NEW journal bearing the title *Gazeto Matematika Internacia* is to be published in Esperanto. It will contain original articles on theoretical and applied mathematics, mechanics and theoretical physics, reprints of articles published in other languages, reviews, correspondence biographies, and papers on the history and teaching of mathematics. It is not intended to compete with, but rather to supplement and strengthen, existing journals. The publisher is F. J. Vaes, Mathenesserlaan 290, Rotterdam.

MR. B. M. DUGGAR details some experiments to ascertain the value of the osmotic pressures in the cells of certain marine algæ in a paper published as vol. xvi., No. 8, of the Transactions of the Academy of Sciences in St. Louis. Common salt, nitre, and sugar were used to make plasmolysing solutions, both in distilled and sea-water. It was found that the amount of nitre in sea-water required to plasmolyse together with the equivalent value of the salts in the sea-water was less than the amount in the fresh-water plasmolysing solution, while the reverse held good for sugar. An attempt to examine the toxic effects of adding to sea-water additional amounts of the different constituent salts occurring in sea-water elicited the facts that magnesium salts, ordinarily toxic to phanerogams and fresh-water algæ, were almost inert, and ammonium compounds were the most active.

FROM Messrs. Burroughs, Wellcome and Co. we have received a copy of the 1907 edition of their "Photographic Exposure Record," which is familiar to most of our photographic readers. It is bound in art-green canvas, and is issued at a shilling. This neat pocket-book has been brought well up to date, and, as we have pointed out on previous occasions, should be the *vade mecum* of every photographer. Even in this small compass a great amount of useful information is compressed, in spite of increased space being provided this year for the record of negative exposures, there being room now for 336 entries. Each copy is accompanied by a folding card for hanging up, which gives useful information regarding the timing of development by the factorial method for various degrees of contrast, and particulars of equivalent plate-speed numbers according to the different systems in use. An entirely new series of examples illustrates the article on exposure.

MR. JOHN C. PACKARD, of the High School, Brookline, Mass., sends us a description of an apparatus he has devised to determine the resultant of two motions at right angles to one another, one uniform, the other uniformly accelerated. A steel ball, 1 inch in diameter, is placed at the top of an inclined plane of plate glass, and is made to acquire a uniform motion in a horizontal direction by being rolled down an auxiliary incline behind a ledge; the ball is then allowed to roll down the glass plane. A tracing of the curve generated by the ball is secured by fixing a sheet of squared paper to the plane and a piece of soft carbon paper over it. The ball in rolling over the carbon paper leaves its trace on the squared paper beneath. A study of the curve thus generated enables the pupil to arrive at the laws of uniformly accelerated motion.

A FOURTH edition of an "Introduction to Physical Chemistry," by Prof. James Walker, F.R.S., has been published by Messrs. Macmillan and Co., Ltd. The work has been enlarged by the inclusion of sections dealing with the behaviour of radio-active elements, atomic and molecular dimensions, and neutrality and salt-hydrolysis. Newer data afforded by recent researches have been substituted for the numerical values of previous editions.

WE regret that in a short notice of Prof. G. S. Boulger's work on "Familiar Trees," in NATURE of January 31, the reviewer was under a misapprehension when he remarked that certain trees had been omitted. The book reviewed is only the first volume of a new edition of Prof. Boulger's work, which is still being issued in fortnightly parts, and the missing species will be dealt with in another volume. The volume should, we consider, have been described as vol. i. on the title-page instead of using the words "First Series."

THE authorities of the British Museum (Natural History) have recently adapted the telephoto lens for securing accurate photographs of specimens. The installation consists of a 12×10 camera with an extension of 4 feet, fitted with an 18×16 rectilinear lens and telephoto attachment, the whole apparatus being made by Messrs. J. H. Dallmeyer, Ltd. It has proved very successful, the improvement in perspective and depth of definition in the photographs being very noticeable when compared with those taken on the same scale with an ordinary lens.